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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,663	11/01/2001	Debargha Mukherjee	10005065-1	3728

7590                  05/17/2005

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

CHEN, WENPENG

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/036,663	MUKHERJEE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Wenpeng Chen	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 07 March 2005.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 2-17 and 19 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 2-4,9-13 and 19 is/are rejected.  
 7) Claim(s) 5-8 and 14-17 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
     1. Certified copies of the priority documents have been received.  
     2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12/17/2004</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

**Examiner's responses to Applicant's remark**

1. Applicant's arguments filed on 3/7/2005 with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection due to amendments.

**Examiner's remark**

2. Correction: In paragraph 2, Office Action mailed on 12/6/2004, "Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Adar et al. (US patent 5,699,457)" shall be replaced with "Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Adar et al. (US patent 5,699,457)" due to a typo. Because of the amendments, the rejections are overcome.

***Claim Objections***

3. Claims 2-10 and 19 are objected to because of the following informalities: Claim 2 is not ended with a period. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for the following reasons.

There are insufficient antecedent bases for the following limitations.

-- Claim 9 recites the limitation "said source image" in line 1.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 2-4, 9-13, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Satoh et al. (US patent 6,658,157.)

Satoh teaches a single pass compression method (Fig. 28) for regulating compression of serialized input data as a function of a measure of said compression comprising:

-- a) converting a source data into a series of blocks, said series including a first block, an intermediate block, and a last block; (Figs. 1 and 28; column 23, lines 12-39; In Fig. 28, the input compressed source data is decoded into DCT blocks. In MPEG, the data is divided into blocks including a first block, an intermediate block, and a last block.)

- b) determining a baseline target block size based upon a target compression ratio for said source data; (Figs. 28 and 30; column 14, lines 4-54; Eqs. 18-19; column 24, line 45 to column 25, line 8; The quantity  $d_0^i$  is a baseline target block size. It depends on  $r$  defined in Eq. 18. When only an I frame is transcoded, the value  $r$  is equal to 2 times target frame bit rate defined in Eq. 26 that depends on the value  $R_2/R_1$  that is a target compression ratio.)

- c) for each block in turn, determining a current target block size, the current target block size for said first block being said baseline target block size, the current target block size for said intermediate block and said last block being equal to said current baseline target block size plus an accumulating savings associated with the preceding block in said series; (Figs. 28 and 30; column 14, lines 4-54; Eqs. 14; column 24, line 45 to column 25, line 8; The quantity  $d_j^i$  is the current target block size. The two terms behind  $d_0^i$  in Eq. 14 is the accumulating savings.)

- d) for each block in turn, selecting a compression mode to compress that block so that the resulting compressed block fits its corresponding target block size as determined in step c, wherein step d involves analyzing the content of the block and selecting said compression mode in part as a function of results of that analysis; (Figs. 28 and 30; column 14, lines 4-54; Eqs. 14; column 14, line 46 to column 15, line 32; column 24, line 45 to column 25, line 8; Equation 17 sets a quantization factor for block j. A different quantization factor corresponds to a different compression mode to compress that block so that the resulting compressed block fits  $d(j)$ . The activity of block j is analyzed and is used in Eq. 24 to modify the quantization scale.)

- e) for each block in turn, compressing the block using the compression mode selected in step d to yield a corresponding compressed block; (Figs. 28 and 30; column 14, lines 4-54; Eqs.

14; column 24, line 45 to column 25, line 8; The quantization factor  $Q(j)$  is used to quantize transform coefficients -- a compressing step.)

- f) for each of said first and intermediate blocks in turn, determine said accumulated savings in part as a function of the size of the compressed block resulting from step e, wherein step f involves determining the size of the compressed block resulting from step e and determining said savings in part as a function of said size; (Figs. 28 and 30; column 14, lines 4-54; Eqs. 14; column 24, line 45 to column 25, line 8; The total difference represented by the two terms behind  $d_0^i$  in Eq. 14 is the accumulating savings represents the accumulated savings.)

-- wherein said source image is a compound document; (Fig. 28; A video image is a document that contains many frames with each frame having various objects. Thus a video is a compound document.)

-- wherein said function is greedy with respect to a target block size. ((Figs. 28 and 30; column 14, lines 4-54; Eqs. 14; The equation shows that total saving is added to  $d_0^i$  to make  $d_j^i$ . Without explicitly specifying the meaning of "greedy", the examiner considers that the function is greedy trying to use all the difference.)

Satoh teaches a single pass compression method (Fig. 28) comprising:

-- an encoder for sequentially compressing a series of source blocks, said encoder implementing plural compression modes with respective predetermined maximum compressed block sizes; (Fig. 28; the combination of elements 28 and 29; Also see the teaching cited above related to the corresponding method claims.)

-- a mode selector coupled to said encoder for selecting one of said compression modes for compressing a given source block, said mode selector selecting a compression mode at least

in part as a function of a target block size for a current source block, wherein said mode selector selects a compression mode for a current block in part as a function of its content; (Fig. 28; element 28; Also see the teaching cited above related to the corresponding method claims.)

-- an evaluator for determining the target block size for each of said source-image blocks, wherein said evaluator includes a block-size reader for determining the block size of a compressed block resulting from compressing of a respective source block, said evaluator determining said target block size in part as a function of the size of said compressed block; (Fig. 28; the part of element 31 performing the evaluation; Also see the teaching cited above related to the corresponding method claims.)

-- an allocator for determining a baseline target block size based upon a target compression ratio for said series of source blocks. (Fig. 28; the part of element 31 performing the allocation; Also see the teaching cited above related to the corresponding method claims.)

#### *Allowable Subject Matter*

8. (1) Claims 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and to correct the objection set forth above. (2) Claims 14-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

A statement of reasons for the indication of allowable subject matter has been given in Office Action mailed on 12/6/2004.

### **Conclusion**

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 571-272-7431. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 571-272-7437. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications. TC 2600's customer service number is 571-272-2600.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Wenpeng Chen  
Examiner  
Art Unit 2624

May 13, 2005

